

“External Perspectives on Game Changing Solutions”

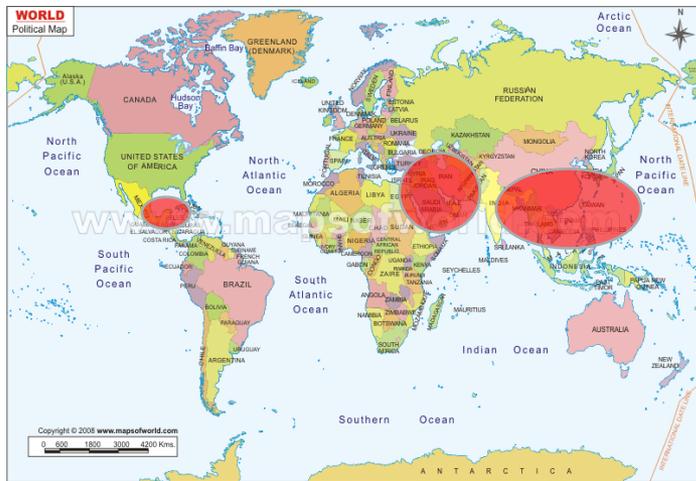
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Urgent Decisions in Rapidly Changing World

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Game-changing environment that will require game-changing solutions



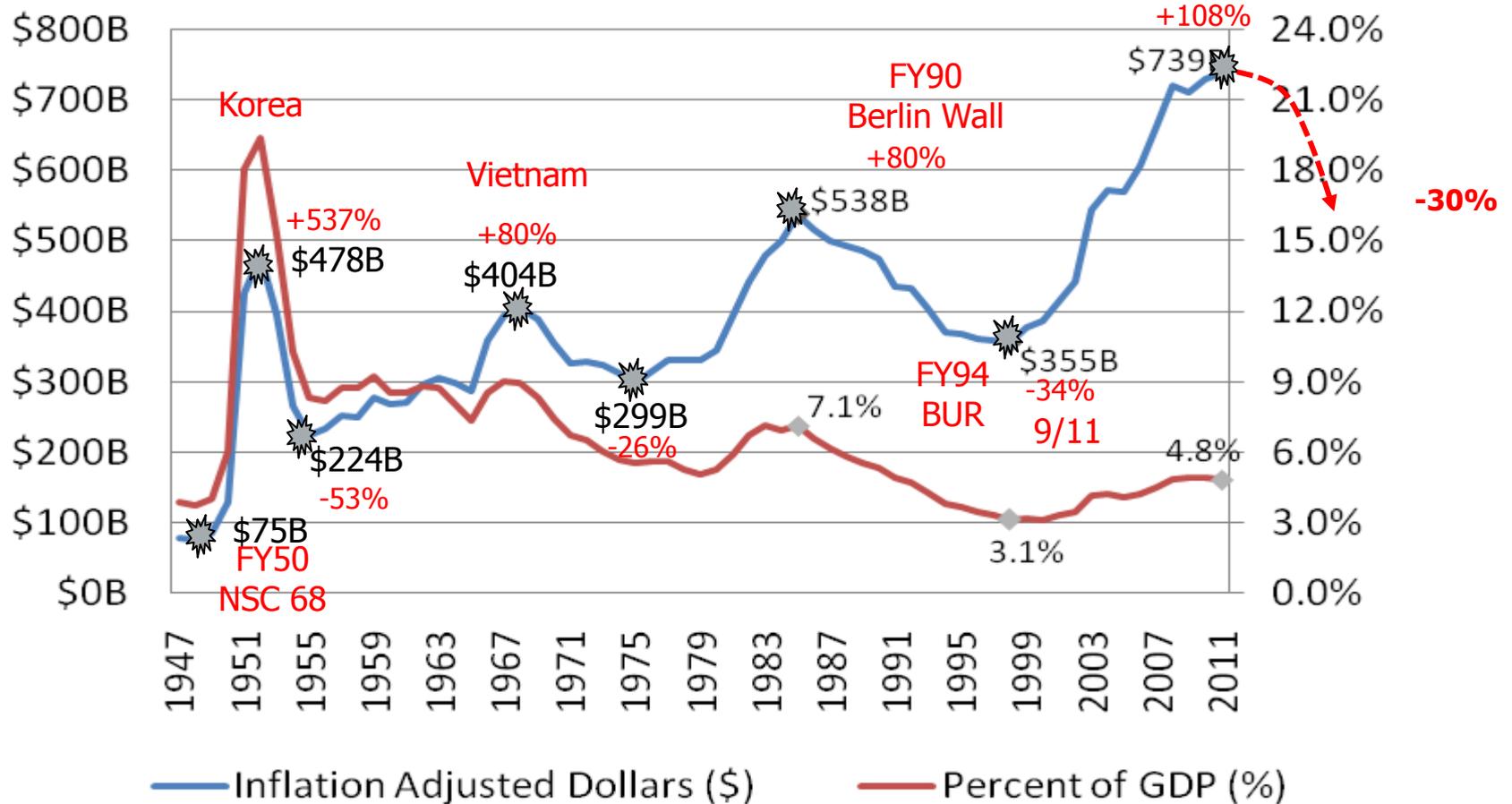
- **Increasing volatility of energy sources / influencers**
 - Unrest in Middle East / North Africa
 - Wars in Iraq, Afghanistan, Libya ...
 - Globalized markets & China's increasing global influence
- **Increasing energy demand**
 - Growth of China and India markets
 - US electricity consumption rising
- **Increasing energy costs**
 - Rising price of oil
 - Rising costs of electricity
 - Rising costs of energy waste
 - Aging infrastructure
- **Decreasing funds**
 - Global financial crisis
 - Decreasing budgets
 - Impending defense draw-down

“Gentlemen, we have run out of money. Now we have to think.”

Sir Winston Churchill, WWII

A New Paradigm – Defense Build-ups & Draw-downs

Total National Defense (050) Budget Authority
(in billions of FY 2011 dollars and as a percent of GDP)



***In the Past – Previously Had Excess Equipment and Manpower
 Now We Have Huge Deficits and Active War(s)***

HASC Assessment of Budget Cuts

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Warrior Reduction

	Today	Estimated Force Based on <u>Current Funding</u>	If Super-Committee Fails
Marine Corps	202,000	173,000	145,000

Platform Reduction

	1990	2000	Today	Estimate Based on Current Funding	If Super-Committee Fails
Army Maneuver Battalions	172	98	100	78	60 - 70
Navy Ships	546	316	288	263	238
USAF Fighters	4355	3602	1990	1739	1512
Strategic Bombers	282	153	135	118	101
Strategic and Tactical Air Lift	872	743	651	572	494

Challenges to Budget, Acquisition and Commercialization of Energy Technology

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- **“If the payback is not for 10-years, then it may be difficult for DOD to support.”** Frank Kendall, P.Dep. Under Sec. OSD, AT&L

- **“Federal procurement is biased to cheapest product, not most efficient.”**
Dr. Arun Majumdar, Director, ARPA-E

- **“Investors often refer to a ‘Valley of Death’ which new initiatives must transit. I tend to think of not one but two such valleys.”**
 - The first when an idea offers considerable promise yet retains substantial risk of technical failure; and
 - The second when the idea’s basic feasibility has been proven but its economic viability at scale is still uncertain.

These are the tipping points where constructive government intervention can make all the difference.” Norm Augustine, former CEO, LM

“We have seen the enemy and he is us.” Pogo

As of March 2011

One Model: Military Housing Privatization Initiative (MHPI)

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- **Military needed to improve housing for service members, without efficient funding mechanisms to do so**
- **Congress established MHPI in 1996**
- **MHPI designed with incentives to attract private sector financing, expertise, and innovation**
- **Provided necessary housing faster and more efficiently than traditional Military Construction limitations would allow**

Over 188,480 homes built or renovated under this program.

One Model: ~~Military Housing~~ Privatization Initiative Energy Surety

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- Military needed to ~~improve housing~~ for ~~service members~~, without efficient funding mechanisms to do so
modernize energy *mission assurance*
- Congress established ~~MHPI~~ in ~~1996~~
ESPI *2013*
- ~~MHPI~~ designed with incentives to attract private sector financing, expertise, and innovation
ESPI
- Provided necessary ~~housing~~ faster and more efficiently than traditional Military Construction limitations would allow
energy modernization

Does an ESPI program modeled after MHPI make sense?

Second Model: Base-Wide ESPC

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- **Unlike MHPI Energy Model, third party must generate savings to earn revenue**
- **No competition between MilCon and SRM (Sustainment, Restoration and Modernization) dollars**
- **Expansion of current model that has proven successful**
- **Prevents ESCO from cherry picking projects**
- **Concerns are high transaction costs and tendency of ESCO's to use off the shelf technology to reduce risk**

Does a base-wide ESPC make sense based on past performance?

Privatizing Military Energy

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- **Focus on long-term costs (including operations & maintenance), not just near-term capital costs**
 - Improve budget scoring (CBO and/or OMB)
 - Leverage Section-2922A (30-year authority)
- **Incentives, Issues and Accountability**
 - Near-term savings returned to the savers
 - Long-term third-party financiers need ROI
 - Tie energy targets to performance evaluations
 - Acceptance under existing utility processes
 - Public Utility Commission regulations
 - Lack of a national Renewable Energy Credit
- **This will not be a “clean sheet” program**
 - Current ESPC, UPC, EUL, PPA contracts impact “Enterprise Approach”

Can the challenges be overcome for energy modernization?

The Microgrid Model

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- **Microgrids can bring game-changing value in BOTH security AND efficiency**
 - Incorporate legacy equipment with cutting-edge control systems
 - Improve efficiency and performance in addition to security – but the security costs must be spread out over many years
- **Microgrids can be phased-in if designed with a long-term vision**
- **Microgrids increase efficiency, facilitate renewables, and provide security.**



“Microgrids are a Triple Play.” Dr. Dorothy Robyn, Dep. Under Sec. OSD I&E

Final thoughts...

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- **Energy Security is like insurance...*but at what price?***
- **Government has unique opportunity to focus on long-term benefits that exceed short-term paybacks**
- **BENS Microgrid Task Force (March 2012)**
- **OSD ESTCP Test & Evaluation Demonstration Projects**

Every dime spent on a kilowatt hour of wasted energy is a dime not spent supporting the Mission or the Warfighter!

Spartan Energy Warriors

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“Energy and persistence conquer all things.”

Benjamin Franklin

1706-1790